



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/700,486

11/05/2003

Ken Yoshida

245042US2

6277

22850

7590

07/08/2005

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

ROYER, WILLIAM J

ART UNIT

PAPER NUMBER

2852

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/700,486

Applicant(s)

YOSHIDA ET AL.

Examiner

William J. Royer

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-69 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 02052004; 05262004; 11122004; 12082004
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

This application is in condition for allowance except for the following formal matters:

***Drawings***

The drawings are objected to because of the following informalities:

Figures 1-35 are objected to because the lines, numbers, and letters are not durable, clean, black, sufficiently dense and dark, and uniformly thick and well-defined.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The disclosure is objected to because of the following informalities:

In Figure 35, reference characters "N1" and "N2" are shown, however, neither, reference character "N1" or "N2" appear to be identified in the specification.

On page 10, lines 12 and 23, change "other" to --- another ---.

On page 11, line 4, change "other" to --- another ---.

On page 12, lines 6 and 9, change "other" to --- another ---.

On page 12, line 8, "a graph collecting showing stack" should be rewritten in a more grammatically correct form.

On page 16, line 11, change "sheet" to --- image ---.

On page 21, line 16, a range is referred to, however, the range stated is not actually a range since it is a single value.

On page 27, line 20, change "an" to --- a ---.

On page 29, line 24, after "8" insert --- . ---.

On page 34, line 8, change "fold" to --- mold ---.

On page 34, line 22, change "by the" to --- by a ---.

On page 34, line 23, change "the drums" to --- drums ---.

On page 34, line 24, reference numeral "10" is referred to, however, reference numeral "10" does not appear to be shown in any of the figures.

On page 50, line 13, reference is made to a "sleeve 60", however, it is unclear in which figure "sleeve 60" is shown.

On page 51, line 9, reference is made to a "sleeve 50", however, it is unclear in which figure "sleeve 60" is shown.

Appropriate correction is required.

The abstract of the disclosure is objected to because of the inclusion of legal phraseology (i.e., means). Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

Claims 22, 33, 44, 55 and 65 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Each of claims 22, 33, 44, 55 and 65 state that the toner comprises spherical toner, however, each of claims 22, 33, 44, 55 and 65 depend from a claim which states that the toner comprises spherical toner.

Claims 12, 18 and 29 are objected to because of the following informalities:

Claim 12, line 4, change "an belt" to --- a belt ---.

Claim 18, line 3, change "primary or the" to -- primary image transfer bias or a --.

Claim 29, line 3, change "primary or the" to -- primary image transfer bias or a --.

Appropriate correction is required.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

***Allowable Subject Matter***

Claims 1-11 are allowable over the prior art of record because the prior art of record fails to teach or suggest providing an image forming apparatus that includes: an image carrier; an intermediate image transfer body; primary image transferring means; and secondary image transferring means; wherein when a surface resistivity of the intermediate image transfer body is measured by a method that repeatedly applies a voltage  $v_1$  of 200 V for a period of time  $t_1$  of 60 seconds to the intermediate image transfer body and grounds the intermediate image transfer body for a period of time  $t_2$

Art Unit: 2852

of 10 seconds a number of times  $N1$  of 1,000, a difference in absolute value between a logarithm of a first time measurement and logarithm of a thousandth time of measurement is  $0.5 \log \frac{V_1}{V_2}$  or below.

Claims 12-15 are allowable over the prior art of record because the prior art of record fails to teach or suggest providing an image forming apparatus that includes: an image carrier; a belt conveyor; and image transferring means; wherein when a surface resistivity of the belt conveyor is measured by a method that repeatedly applies a voltage  $V1$  of 200 V for a period of time  $t1$  of 60 seconds to the belt conveyor and grounds the belt conveyor for a period of time  $t2$  of 10 seconds a number of times  $N1$  of 1,000, a difference in absolute value between a logarithm of a first time measurement and logarithm of a thousandth time of measurement is  $0.5 \log \frac{V_1}{V_2}$  or below.

Claims 16-48 are allowable over the prior art of record because the prior art of record fails to teach or suggest providing an image forming apparatus that includes: an image carrier; an intermediate image transfer body; primary image transferring means; and secondary image transferring means; wherein the intermediate image transfer body has a surface potential attenuation ratio that attenuates, before a portion of the intermediate image transfer body applied with a primary image transfer bias is subject to a next primary image transfer, a potential remaining on the portion to a degree not disturbing the next primary image transfer.

Claims 49-69 are allowable over the prior art of record because the prior art of record fails to teach or suggest providing an image forming apparatus that includes: an image carrier; an intermediate image transfer body; primary image transferring means; and secondary image transferring means; wherein the intermediate image transfer body has a surface potential attenuation ratio that attenuates, before a portion of the intermediate image transfer body applied with a secondary image transfer bias is subject to a next primary image transfer, a potential remaining on the portion to a degree not disturbing the next primary image transfer.

#### ***Relevant Prior Art***

The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takeuchi et al disclose an image forming apparatus wherein the reduction of the transfer efficiency of a toner image from an intermediary transfer member onto a transfer material due to the property of the layer structure of the intermediary transfer member, is suppressed, while preventing toner scattering.

Tamiya et al disclose an image forming apparatus including an image carrier and a polarization uniforming structure.

Kera et al disclose an image forming apparatus for improving second transfer efficiency from an intermediate transfer body to a medium.



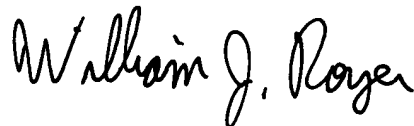
Art Unit: 2852

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Royer whose telephone number is (571) 272-2140. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur T. Grimley can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



William J. Royer  
Primary Examiner  
Art Unit 2852

wjr  
July 6, 2005